MINNEAPOLIS-HONEYWELL CONTROL SYSTEMS

For Heating, Ventilating and Air Conditioning

M I N N E A P O L I S -

SO YOU'RE GOING TO BUILD A HOUSE

Of course you are planning to install Automatic Heating and Air Conditioning in some form or other in your new home, but have you given Automatic Controls the consideration they deserve? Automatic Control makes Automatic Heating and Air Conditioning possible. Without Automatic Control neither could exist.

● On the following pages are described the functions of Automatic Controls as applied to various types of Automatic Heating and Air Conditioning equipment. This will enable you to determine the kind of control equipment necessary to accomplish the results desired.

● Minneapolis-Honeywell has nothing to sell directly to you, although it is the oldest and largest manufacturer of control equipment in the world. Minneapolis-Honeywell controls are sold to manufacturers and dealers, and are installed with your Automatic Heating and Air Conditioning equipment. Their importance cannot be too strongly stressed because Automatic Controls are responsible for the successful operation of the equipment you buy.

HONEYWELL

AUTOMATIC CONTROLS

MH

MINNEAPOLIS

Install Automatic Heating

and Air Conditioning . . . .

BUT

don't overlook the controls that make it automatic

HONEYWELL

M-H BASIC CONTROLS

BASIC AUTOMATIC HEATING CONTROLS

● Automatic heating can be accomplished only if the burner, regardless of the type of fuel used, is equipped with automatic controls. These controls should consist of a thermostat to stabilize room temperature, a limit control to restrict the temperature of the furnace or boiler at a given point, a primary control to operate the burner in the case of oil or coal firing, and a valve in the case of gas heating. Such controls, of course, are necessary for the operation of your burner and are required by most local ordinances. They represent the minimum equipment with which Automatic Heating can be properly installed.

Even if this minimum equipment is all that you require, insist upon Minneapolis-Honeywell Controls, for they insure the best performance from your system and make sure that proper controls will be available for future equipment if you make additions or changes later. Minneapolis-Honeywell Automatic Controls are accepted as standard by the majority of manufacturers, and are available for all types of oil, gas, or coal burners, as well as kindred equipment. The Minneapolis-Honeywell line is complete in itself.

In order to make list prices of Automatic Heating units attractive, most dealers supply only standard equipment, which includes a plain type thermostat such as the Acratherm. There are, however, several additional or optional controls you should know about. You probably will want more than the very minimum of controls, especially in view of the fact that complete automatic control will give much more comfort, convenience and economy, and will actually cost but little more.

THE ACRATHERM

MINNEAPOLIS-HONEYWELL

THE ACRATHERM • A REVOLUTIONARY ROOM TEMPERATURE CONTROL EMPLOYING THE APPROVED PRINCIPLE OF "HEAT ACCELERATION"

● Every automatic heating plant must have a thermostat, but only the M-H Acratherm will give you the perfection of temperature control you should have. It will probably cost you little, if any, more than a conventional type. The Acratherm is a new type of thermostat recently developed by Minneapolis-Honeywell engineers. It is the Minneapolis-Honeywell version of a plain type thermostat, yet has many distinct and revolutionary advantages. Because the greater majority of burners are supplied with M-H Controls, the chances are your dealer will figure the Acratherm in his original price. If some other plain type thermostat is substituted, the following facts will show you why it is wise to insist upon the Acratherm or one of the other Minneapolis-Honeywell Thermostats employing the Acratherm principle.

The Acratherm does what other thermostats strive to do; it provides stabilized heat. By means of its "accelerator", it actually senses temperature changes before they occur and speeds up the heating system to meet them. It literally irons out temperature fluctuations in any modern heating system by automatically adjusting the length and number of burner operations to supply heat in response to the changes in outside weather. Short frequent burner operations in cold weather, and less frequent operations in mild weather, produce stabilized heat. No thermostat without the Acratherm "Accelerator" can do this.

The Acratherm also eliminates the condition known to heating engineers as "Cold 70" which is due to air stratification as a result of intermittent firing. When heat is not supplied constantly enough to cause circulation within the room, there is a tendency for warm air to rise to the ceiling and cold air to settle on the floor, and even though the ordinary room thermostat is satisfied, a chilly feeling prevails. But the Acratherm, because it provides short frequent burner operations, keeps the air within the room circulating and temperatures even at all times.

When you install Automatic Heating insist that it is Acratherm controlled, as the Acratherm is probably Minneapolis-Honeywell's greatest single contribution to the automatic heating industry.

CLOCK CONTROLS

MINNEAPOLIS-HONEYWELL

LOWERED NIGHT TEMPERATURE AND FUEL ECONOMY

● It is an established fact that reducing temperature at night and during periods when heat is not needed, can save you from 10 to 30% in fuel costs. To make this lowering of temperature practical, Minneapolis-Honeywell originated and pioneered "Clock Control". It has been proved through exhaustive tests that fuel is saved at the rate of 3.2% per degree of lowered temperature . . . in other words — if your temperature control point is lowered 10° during the night or when temperature at the higher point is not needed, 32% of the fuel normally consumed during those hours will be saved. Lowered night temperature can be automatically accomplished at small cost to you. The M-H Chronotherm or the Da-Nite Acratherm provides "stabilized heat" as does the plain Acratherm, but offers, the additional advantages of lowered night temperature.

THE CHRONOTHERM

● The Minneapolis-Honeywell Chronotherm is the finest thermostat in the Minneapolis-Honeywell line, and is the ace of all thermostats. In addition to providing the same Stabilized Heat as the Acratherm, it is equipped with an accurate and dependable, self-starting, electric clock. It automatically lowers temperature at night and raises the temperature in the morning at any given time before you arise. The Chronotherm is completely automatic. Its added cost is more than compensated for, by the comfort and economy it provides. In fact, you can't afford to be without the Chronotherm in your home.

THE DA-NITE ACRATHERM

● The Da-Nite Acratherm provides the same exclusive control qualities as the plain Acratherm and the Chronotherm, but requires manual attention to provide night temperature shut-down. It is a less expensive way to accomplish lowered night temperature. At night when you retire or at any time when heat is not needed — if you are away for the day — a twist of the fingers reduces the temperature to a fuel saving level for the length of time you designate. When this period has elapsed, the Da-Nite Acratherm automatically restores the comfortable temperature you desire. This means that your home is always comfortable in the morning when you arise, yet you have saved fuel at the rate of 3.2% for every degree you have lowered the temperature at night or during your absence.

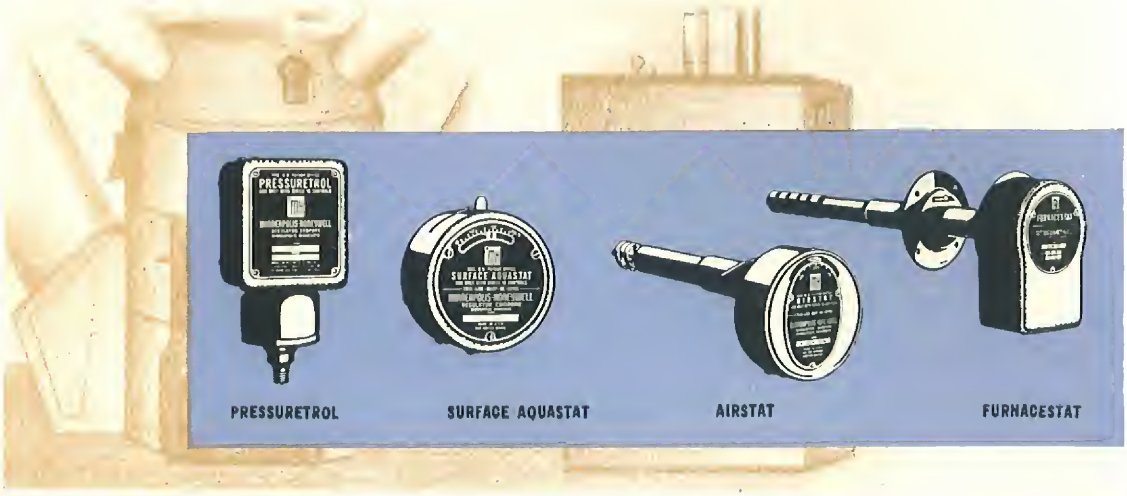
FURNACE AND BOILER LIMIT CONTROLS

● Limit controls safeguard the furnace or boiler against excessive temperatures or pressures. It is not uncommon for doors or windows to be left open, causing the thermostat to continually call for heat with the result that the heating plant itself becomes overheated. Limit controls are required by law in a great many localities and their cost is almost negligible.

The Airstat, for warm air systems, automatically shuts off the burner in the event the temperature of the furnace becomes too high. The Aquastat performs the same function for hot water systems, while the Pressuretrol and Vaporstat provide this protection for vapor and steam systems.

AUTOMATIC BLOWER CONTROL FOR WARM AIR SYSTEMS

● The blower or booster fan increases circulation and also speeds up the delivery of heat in warm air heating plants. Minneapolis-Honeywell Automatic Controls operate the blower or fan in any sequence desired. During summer months the blower can be used to circulate air through the basement, providing a cooling effect. Used at night, the fan or blower empties the house of warm air and draws in cool fresh air from the outside. All of this can be accomplished automatically by the installation of Minneapolis-Honeywell Controls.



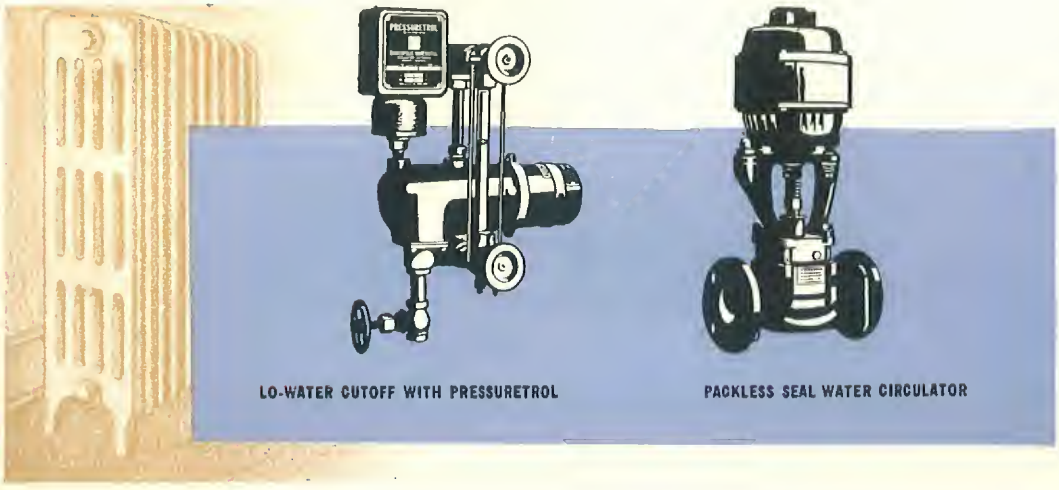
H O N E Y W E L L

THE LO-WATER CUTOFF — FOR STEAM OR VAPOR SYSTEMS

● Considerable damage can result to a steam or vapor system in the event the water level in the boiler becomes too low, either through neglect or because of an unnoticed leak. The M-H Lo-Water Cutoff automatically turns off the burner which remains off until a safe water level in the boiler is restored. No steam or vapor heated home should be without this protection, for lack of it may involve damage to property, or injury to the occupants. An M-H Lo-Water Cutoff can easily be added to any installation at a very nominal cost.

FORCED HOT WATER CIRCULATION

● Forced circulation of hot water in hot water systems is the modern and efficient way to insure quick, even heat. Without proper circulation, remote radiators naturally do not deliver heat as quickly as those nearer the heating system. The Minneapolis-Honeywell electrically operated Water Circulator automatically forces hot water throughout the system providing even distribution of heat to all parts of the home. Because the circulation is much more rapid with the circulator than with natural or gravity circulation, the temperature of the boiler water may be maintained at a lower level. The precision built M-H Packless Seal Circulator is leak-proof and extremely quiet. Its oil reservoir provides scientific lubrication and insures trouble-free operation.



LO-WATER CUTOFF WITH PRESSURETROL

PACKLESS SEAL WATER CIRCULATOR

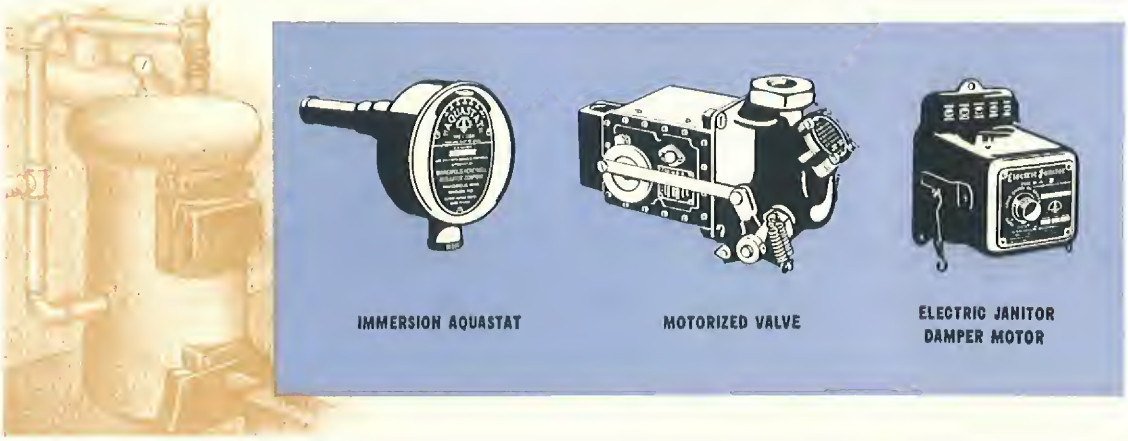
DEPENDABLE CONTROLS COST LESS THAN SERVICE

DOMESTIC HOT WATER FROM YOUR AUTOMATIC BURNER

● The Automatic Burner used to heat your home can also furnish a plentiful supply of low cost hot water during the summer as well as winter. When heat is not needed to maintain comfortable temperatures throughout the house, the radiator lines are automatically shut off and heat is transmitted to an indirect water heater. In a steam system, only an indirect water heater and a low limit control (Aquastat) are required. With a hot water heating system, the indirect heater is used, as well as the low limit Aquastat — and in addition a water circulator, discussed on the previous page, and flow valves are used to prevent heat travel to the rooms during the summer.

AUTOMATIC CONTROL OF HAND FIRED HEATING PLANTS

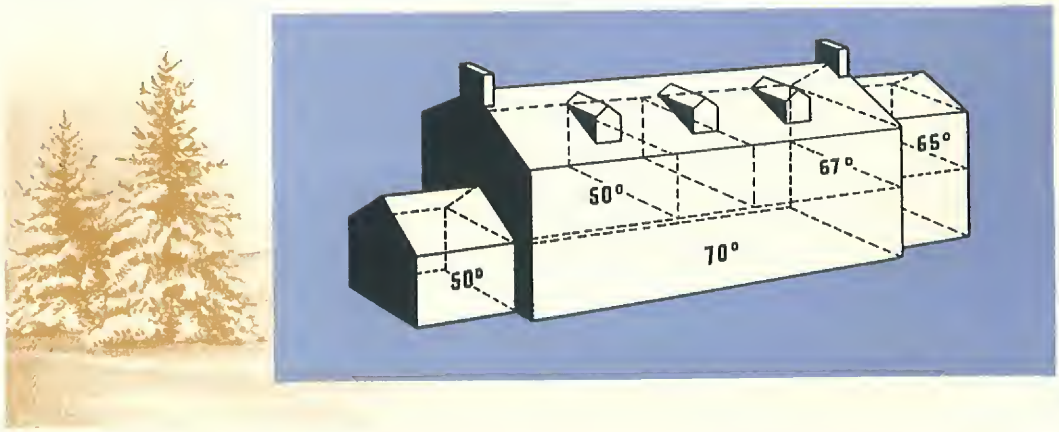
● The simplest form of control is the automatic damper regulator for a manually fired heating plant. The M-H Electric Janitor consists of a room thermostat and an electric motor which opens and closes the furnace or boiler drafts in accordance with the room temperature requirements. A limit control should always be used. This not only provides healthful and comfortable temperatures but eliminates fuel waste due to overheating, which often occurs when the heating plant is manually regulated.

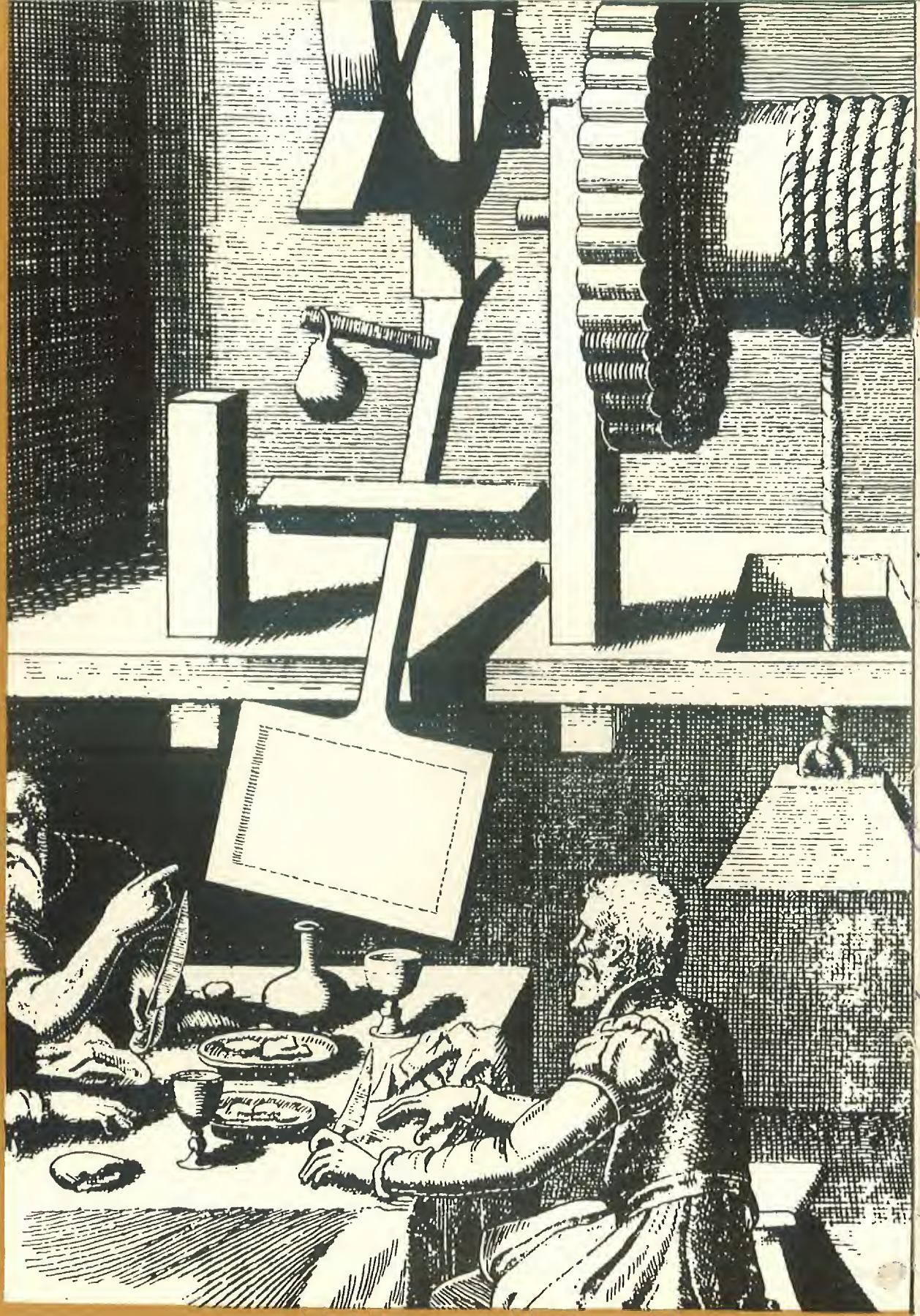


ZONE CONTROL FOR LARGE HOMES

● If you are building a large home, with servant quarters, guest rooms, garage, and other sections which do not constantly require the same temperature as the living quarters, or a home in which certain sections are differently affected by their exposure to the sun and wind, consideration of automatic control of the individual zones is highly important. The living rooms of your home should be kept at 70 or 72 degrees, while the temperature in the garage need not be more than just above freezing. Servants' quarters and guest rooms should be kept cool during the hours when they are not being used.

The effects of the sun and wind also must be taken into consideration. Rooms most exposed to wind must be supplied with more heat, while rooms which receive the benefit of solar radiation should be given less heat if uniform temperatures are to be maintained. To accomplish such results, the heating system should be divided into sections and controlled under a system known as Zone Control, which takes all heating factors into account and distributes heat accordingly. The economies that are effected will more than pay the cost of a Zone Control System, in a comparatively short time.





AIR CONDITIONING IS NOT NEW

Early device to ventilate a room by a mechanically operated fan . . . Engraving after Boeckler, 1659

AIR CONDITIONING

● Probably no individual subject in the building field is more widely discussed and yet less understood than Air Conditioning. This is true because of the vast difference in opinion as to what Air Conditioning actually is.

In reality Air Conditioning, or to be explicit, year 'round Air Conditioning, consists of six important factors, namely: Heating, Cooling, Humidifying, Dehumidifying, Circulating and Cleaning . . . all under Automatic Control.

Air Conditioning thus means much more than summer cooling and winter humidifying. It has long passed the luxury stage and is not only desirable but necessary, because it produces untold indoor comfort throughout the year, and is a vital factor in maintaining health and comfort as well as keeping furnishings and buildings in good condition. And, as is the case with Automatic Heating, true Air Conditioning cannot exist without Automatic Control.

It is not necessary, however, that complete year 'round Air Conditioning be installed at one time. This can be undertaken step by step. Additions can be made from time to time, but unless the control system for your equipment is such that you can obtain additional controls which will match up with your original installation, you will not have a coordinated system capable of producing the best results. In this respect Minneapolis-Honeywell can serve you to best advantage, because the Minneapolis-Honeywell line is complete in itself, and M-H controls are designed to work together.

The importance of Automatic Control cannot be too strongly emphasized. Properly applied, it insures the most satisfactory results that the conditioning system is capable of producing. It is, therefore, important that the possibilities of Air Conditioning and Automatic Control be broadly understood and considered when selecting various types of Air Conditioning equipment.

AIR CONDITIONING FUNCTIONS

● There are six functioning factors of an Air Conditioning system, namely: Heating, Cooling, Humidifying, Dehumidifying, Circulating and Cleaning.

1 **Year 'round functions consist of circulating and cleaning the air.**

2 **Winter functions include heating and humidifying.**

3 **Summer functions are cooling and dehumidifying.**

AUTOMATIC CONTROL

● Whether you install only Automatic Heating or add to it one or more of the other functions of Air Conditioning, the importance of the Automatic Controls cannot be too strongly emphasized. With adequate Automatic Control, the system, large or small, can be a comfort and joy; without adequate Automatic Control the system will likely be an annoyance and worry.

In general, Automatic Control in an Air Conditioning system does the following:

1 **ELIMINATES HUMAN ERROR:** Automatic Control provides adequate, accurate, and dependable regulation of the several factors and the various mechanical units which produce Air Conditioning. Controls will react to temperature and humidity changes long before the human body is aware of a change.

2 **REDUCES COST OF OPERATION:** When Air Conditioning is Automatically Controlled there is no waste of fuel or power. Overheating in winter and under-cooling in summer are avoided.

3 **PROVIDES SAFETY:** The steam or water pressure in a heating boiler, or the temperature of a warm air furnace must be controlled to safeguard the heating plant. The amount of moisture in the air must be governed to prevent damage. Dependable safeguard can be provided only by automatic safety controls which are a part of every Minneapolis-Honeywell Control System.

There is a Minneapolis-Honeywell Automatic Control for every Air Conditioning function, and for every type of equipment selected. Automatic Control is just as important as the Air Conditioning equipment itself, for without control, a system cannot function as efficiently, as economically, or as conveniently as it should.

AIR CONDITIONING AVAILABLE FOR EVERY HOME

● No matter what type of home you are planning to construct, and regardless of the type of heating system you select, there is an Air Conditioning System available to fit your plans. The type of system best suited for your individual home will depend, of course, upon the construction of the house, its location, and upon the type of heating plant you select.

Generally speaking, there are two types of Air Conditioning Systems. The first is a warm air system, the second, a split system which utilizes a steam or hot water boiler to heat the air. In each instance the air is circulated throughout the house by a centrally located fan and suitable distribution ducts. There are also available, unit conditioners, which may be installed in one or more sections of the home.

AIR CONDITIONING NEED NOT BE COSTLY

● Naturally, one of the first questions which will come to your mind is how much will an Air Conditioning System cost, and will it be expensive to operate?

There is no way for making a blanket estimate. Installation cost depends entirely upon the type and size of the home and the degree to which true air conditioning is undertaken.

In any event, it is well to point out that Air Conditioning need not be a costly undertaking. Conditioning can be accomplished step by step. Some of the factors can be incorporated in the original heating system, and the remaining factors added from time to time as the need arises or as finances permit.

Operating costs, of course, vary in proportion to the size of your home and its geographic location. Complete Automatic Control will, of course, materially reduce operating costs. Automatic Control will keep your home warm enough but never too warm — cool enough but never too cool — moist enough but never too moist. Therefore there is no waste, and waste is always costly.

The construction of your home will play an important part in the operating cost of an Air Conditioning System. Insulation, doors and windows, shades and awnings will make a tremendous difference in the cost of both winter and summer conditioning.

PLAN AIR CONDITIONING STEP BY STEP

● In all homes there are often several ways of accomplishing the same final results from Air Conditioning. But whether you plan to make the complete installation when you build or to provide Air Conditioning step by step, it is necessary that definite plans be made at the outset. Too much stress therefore cannot be placed on the value of employing a competent Architect or Engineer who can properly plan your entire system. Provision must be made for ducts to circulate conditioned air; the plant itself must be properly located, and many other elements must be taken into consideration that require the services of an Architect or Engineer.

The selection of the proper basic control system is likewise of utmost importance. It is necessary that the control system be such, that whether it is installed at one time, or step by step, it shall be completely coordinated and will function as a unit. Minneapolis-Honeywell is the only manufacturer offering a complete line — the right control for every application. When you start with Minneapolis-Honeywell Controls you have complete assurance that other necessary controls can be added from time to time, so that as you install additional Air Conditioning equipment, the entire control system will work together in perfect harmony.

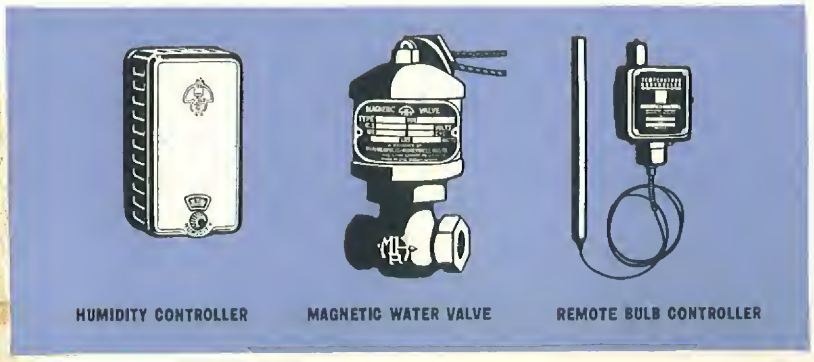
HEATING: Heating is probably the most necessary of all the six factors of Air Conditioning and is therefore the first step to True Air Conditioning. Your first consideration should be to determine whether the general type of heating system best suited for your home shall be warm air, hot water, steam or vapor. The type of fuel is the next consideration, and you have the choice between an oil burner, gas burner or coal burner to provide automatic heating. The geographic location of your home will often determine which type of fuel is best suited for your needs. This factor frequently influences operating costs.

H O N E Y W E L L

HUMIDIFYING: The next step in Air Conditioning, from the standpoint of ease of installation as well as cost, is humidifying equipment. It is not much of a task to install an Air Conditioning System which automatically insures distribution of a sufficient amount of moisture at all times to maintain the proper degree of humidity

To control humidity, an automatic water valve is necessary. This valve is regulated by a humidity controller that opens and closes the valve as the need for moisture becomes apparent. Unless humidification is automatically controlled, there is danger of excessive moisture, which not only can cause windows to frost but can also cause material damage to furnishings, walls, and other parts of the home.

CIRCULATING: Regardless of the type of heating system employed, suitable means must be provided to circulate conditioned air throughout the home. When one central conditioning system is used, a blower or fan is installed in the basement and air is distributed throughout the various rooms. Automatic Controls will govern the sequence of this blower operation as required, depending upon the system. Provision should also be made for an automatic switch-over from the heating to the cooling cycle, so that at the change of seasons, or in those climates subject to sharp and extreme changes in temperature, no manual attention will be required. The heating or cooling equipment, the humidifying apparatus, and blower or fan should be coordinated to meet these changing requirements as they occur.



DEPENDABLE CONTROLS COST LESS THAN SERVICE

CLEANING: It is a simple matter to install Air Cleaning equipment. This usually consists of filters through which the air is drawn, thus removing dust particles and foreign matter. No controls are necessary for this operation, though the controls which govern circulation do indirectly control the cleaning.

COOLING: This is accomplished by putting into circulation air which has been artificially chilled by passing it over coils cooled with cold water, or by mechanical refrigeration, or by passing the air through a cold water spray, or over ice. The amount of time that the refrigeration compressor, or the water pump, should run must be automatically controlled to insure proper cooling at minimum cost.

DEHUMIDIFICATION: This involves the removal of moisture from the indoor air by either passing the air through a cold water spray, which, because it is cold, actually takes moisture out of the air, or over cold coils, upon which the moisture will gather, just as moisture will collect on the outside of a cold glass. This may also be done chemically by passing the air through a chemical solution, or bed of crystals, which absorbs the moisture. There is a close relationship between Cooling and Dehumidifying, and while Cooling may not necessarily include Dehumidifying, the latter usually has a cooling effect. Under proper Minneapolis-Honeywell control, the combined effect of these factors can be made to produce a most satisfactory condition at the lowest possible cost.

OPTIONAL AIR CONDITIONING EQUIPMENT

● When artificial cooling is not possible or not deemed necessary, considerable benefit can be derived through use of an attic fan. In the evening when outside temperatures fall, the attic fan expels the warm air from the house and fresh, cool air is drawn in through doors or windows left open on the ground floor.

This naturally has a distinct cooling effect, as it not only causes circulation but supplants warm air with the cooler outside air.

Automatic Control can operate an attic fan in several different ways. An M-H Time-O-Stat can automatically start the fan at a given hour and turn it off at any given time, or it can start the fan only when the temperature is above a given point in the home.

HONEYWELL

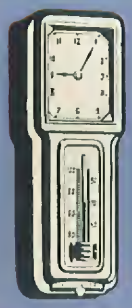
WHY MINNEAPOLIS-HONEYWELL

● Minneapolis-Honeywell is the oldest and largest manufacturer of automatic control equipment in the world. It has pioneered and developed every important contribution to this vast industry. Its products are backed by more than fifty years of actual field experience together with constant research and practical laboratory tests. Only Minneapolis-Honeywell can supply a complete Control System to meet every known requirement, be it a small or large home, a simple automatic heating job or a complete year 'round air conditioning installation. Branch offices are maintained in seventy principal cities to assure prompt service at all times. When you install Minneapolis-Honeywell Controls, you have definite assurance that your heating or air conditioning system will function at its best, both as regards performance and economical operation. Your heating or air conditioning Engineer and your Architect will heartily recommend and endorse Minneapolis-Honeywell Controls.

DEPENDABLE CONTROLS COST LESS THAN SERVICE

CONTROL REQUIREMENTS FOR AUTOMATIC BURNERS INCLUDE

ROOM THERMOSTAT



A

CHRONOTHERM—The world's finest thermostat. It is fully automatic, has a self-starting electric Telechron clock movement and offers all the advantages of lowered night temperature without manual attention throughout the entire heating season. Stabilized Heat is assured through the exclusive M-H principle of "Heat Acceleration".

B

DA-NITE ACRATHERM—This thermostat, like the Chronotherm, provides lowered night temperature but requires a manual setback each night before you retire. Day time temperature is then automatically restored at any time you desire. Stabilized Heat is maintained through its "accelerator" . . . an exclusive M-H feature.

C

THE ACRATHERM—This is the M-H plain type thermostat. It has "Heat Acceleration" and will definitely maintain stabilized temperature throughout your home, regardless of outside weather conditions. If you do not decide to have the Chronotherm or the Da-Nite Acratherm, insist upon having the M-H Acratherm.

OPERATING CONTROL

D

PROTECTORELAY—This is the recommended operating control for your automatic oil burner. It is actuated by the M-H room thermostat you select. M-H Protectorelays provide automatic shut down in the event of combustion failure, and provide a means for automatic recycling.

E

GAS VALVE—This is the silent solenoid M-H automatic gas valve for your automatic gas burner. Like the Protectorelay for the oil burner, this solenoid gas valve takes its control from the M-H "heat accelerated" room thermostat which you specify. Motorized Gas Valves also available.

F

TIMERELAY—Automatic coal burners are operated by either the M-H Timerelay or Stokerswitch which maintains the fire in mild weather and controls your burner with a maximum of economy. These instruments are controlled by the M-H room thermostat you select.

SAFETY CONTROL

G

AIRSTAT — A safety or limit control which protects your furnace from over-heating, by automatically shutting off your burner before the bonnet or stack temperature in your warm air heating plant becomes excessive, thereby offering complete safety of operation.

H

AQUASTAT — Should a window or door be left open, your thermostat may call for heat continually. Under these conditions an overheated boiler will undoubtedly result. The Aquastat measures boiler temperature and provides automatic shut down whenever safe limits are exceeded.

I

PRESSURETROL—This safety or limit control is a necessary part of every steam, vapor or vacuum automatic heating system. It may be used by itself to provide protection against high pressure or may be used in combination with the M-H Lo-Water Cutoff for Duplex switch operation.

CONTROL REQUIREMENTS FOR AIR CONDITIONING SYSTEMS INCLUDE

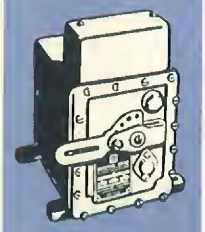
AUTOMATIC CONTROLS

J

HUMIDITY CONTROL — This instrument has a human hair, hygroscopic element which will control, between predetermined limits, the relative humidity in your home. The importance of proper humidity cannot be overestimated and can be had only through automatic control.

K

WATER VALVE — These solenoid valves take their control from the Humidity Controller and are especially designed for domestic application. They are extremely silent — sturdily built — and are so constructed that the seat and plunger may be easily removed for cleaning.



L

MODUTROL MOTOR — The Modutrol Motor is used to automatically operate valves or dampers which in turn control the flow of steam, water, or air. These motors are built in several types, both the two-position "on" and "off" type and the full modulating or proportioning type.

AUXILIARY AUTOMATIC CONTROLS YOU SHOULD CONSIDER

AUTOMATIC CONTROLS

M

LO-WATER CUTOFF — This safety control constantly watches the water level in your boiler and shuts off your automatic burner whenever the water level becomes too low for safety. Combined with the Pressuretrol, as illustrated, it is known as an M-H Duplex Switch.

N

WATER CIRCULATOR — The M-H Packless Seal Circulator should be considered for all hot water heating plants. It makes possible smaller size piping throughout your home and will actually reduce fuel costs. This Circulator is precision built and scientifically lubricated.

O

FLOW VALVE—Flow Valves are used in conjunction with the M-H Packless Seal Circulator to provide a completely automatic summer-winter domestic hot water system. Without the circulator, M-H Motorized Flow Valves and a low limit control provide the same function.

DAMPER CONTROLS FOR HAND FIRED, COAL BURNING HEATING PLANTS

AUTOMATIC CONTROLS

P

DAMPER MOTOR—This is the small but efficient, electrically operated, damper motor supplied with the Electric Janitor Control Packages. It takes its Control from your room thermostat, which may be either the Chronotherm, Da-Nite Acratherm or the plain type Acratherm.

ELECTRIC JANITOR CONTROLS — For the hand-fired heating plant, automatic controls offer economy of operation as well as convenience. These controls are supplied in complete package outfits including the sturdy, fully electric, damper motor (illustrated) together with transformer and all necessary fittings. The room thermostat supplied may be either the Chronotherm (**A**), Da-Nite Acratherm (**B**) or the plain type Acratherm (**C**), all illustrated above. Don't be without Electric Janitor Automatic Controls even though you do not install an automatic burner. Automatic Controls are indispensable in any home, regardless of the type of heating equipment selected.

- One of the Blocks Below Will Fit Your Requirements.
- Study the Opposite Page. ✓ Check the Controls Below That You Want Specified.
- Insist on M-H Controls Throughout Your Home . . Your Architect Will Recommend M-H.
- CONTROLS IDENTIFIED BY STARS (☆) ARE THE RECOMMENDED INSTRUMENTS YOU SHOULD HAVE.

CHECK YOUR REQUIREMENTS . . . TEAR OUT THIS PAGE FOR YOUR ARCHITECT OR HEATING CONTRACTOR

	FOR AUTOMATIC OIL BURNER	FOR AUTOMATIC GAS BURNER	FOR AUTOMATIC COAL BURNER (STOKER)
WARM AIR HEATING PLANT	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Protectorelay.....D ☐ BLOWER OR FAN CONTROL ☆ M-H Furnacestat..... ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System.... ☐	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Gas Valve.....E ☐ SAFETY CONTROL ☆ M-H Airstat.....G ☐ ☆ M-H Pilotstat..... ☐ BLOWER OR FAN CONTROL ☆ M-H Furnacestat..... ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System.... ☐	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Timerelay or Stokerswitch.F ☐ SAFETY CONTROL ☆ M-H Airstat.....G ☐ BLOWER OR FAN CONTROL ☆ M-H Furnacestat..... ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System..... ☐
HOT WATER SYSTEM	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Protectorelay.....D ☐ SAFETY CONTROL ☆ M-H Aquastat.....H ☐ AUXILIARY CONTROLS ☆ M-H Water Circulator....N ☐ ☆ M-H Summer-Winter Controls for year 'round hot water..... ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System.... ☐	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Gas Valve.....E ☐ SAFETY CONTROL ☆ M-H Aquastat.....H ☐ ☆ M-H Pilotstat..... ☐ AUXILIARY CONTROLS ☆ M-H Water Circulator....N ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System.... ☐	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Timerelay or Stokerswitch.F ☐ SAFETY CONTROL ☆ M-H Aquastat.....H ☐ AUXILIARY CONTROLS ☆ M-H Water Circulator.....N ☐ ☆ M-H Summer-Winter Controls for year 'round hot water..... ☐ AIR CONITIONING CONTROLS ☆ M-H Standard System..... ☐
STEAM OR VAPOR SYSTEM	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Protectorelay.....D ☐ SAFETY CONTROL ☆ M-H Pressuretrol..... I ☐ ☆ M-H Lo-Water Cutoff.....M ☐ AUXILIARY CONTROLS ☆ M-H Summer-Winter Controls for year 'round hot water..... ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System.... ☐	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Gas Valve.....E ☐ SAFETY CONTROL ☆ M-H Pressuretrol..... I ☐ ☆ M-H Lo-Water Cutoff.....M ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System.... ☐	ROOM THERMOSTAT ☆ Chronotherm.....A ☐ Da-Nite Acratherm.....B ☐ Acratherm.....C ☐ OPERATING CONTROL ☆ M-H Timerelay or Stokerswitch.F ☐ SAFETY CONTROL ☆ M-H Pressuretrol..... I ☐ ☆ M-H Lo-Water Cutoff.....M ☐ AUXILIARY CONTROLS ☆ M-H Summer-Winter Controls for year 'round hot water..... ☐ AIR CONDITIONING CONTROLS ☆ M-H Standard System..... ☐

AIR CONDITIONING CONTROLS DEPEND UPON THE TYPE AND COMPLETENESS OF THE SYSTEM YOU SELECT

ALL SYSTEMS

- Humidity Control is of vital importance. For health and comfort, Relative Humidity must be maintained within predetermined limits during both summer and winter seasons.
  ☆ Humidity Controller (J) and Water Valve (K)...☐
- Summer-Winter Automatic Change-Over is indispensable in a year 'round system. Automatic reversal of the control action from the heating to the cooling cycle in response to changes in outside weather assures comfort and economy of operation.
  ☆ M-H Summer-Winter Automatic Change-Over...☐
- Duct Temperature Controllers are often necessary when it is impossible to find a desirable location for a standard room thermostat.
  ☆ Minneapolis-Honeywell remote bulb modulating or two position controllers.....☐
- If Zone Control is contemplated, use Modutrol motored valves and dampers with proper thermostats or temperature controllers.
  ☆ Minneapolis-Honeywell Modulating Thermostats and Modutrol Motors (L).....☐

FOR HAND-FIRED HEATING PLANTS — ☆ Use M-H Electric Janitor Controls..P ☐

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☐ Please send me your FREE illustrated booklet, entitled "AND THEN — WE TURN ON THE HEAT".

I intend to install Automatic Heat and will use:
☐ Oil Burner ☐ Gas Burner ☐ Coal Burner. (Stoker)

I intend to install ☐ Summer ☐ Winter ☐ Year 'Round Air Conditioning Equipment.

☐ I expect to use a hand fired heating plant.

chitect's Name

Name

Street and Number

Heating Contractor's Name

City and State

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